

PHOTOGRAPHY

MADE EASY.

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MADE EASY;

OR,

WHAT TO DO AND HOW TO DO IT,

CONTAINING

PLAIN INSTRUCTIONS IN THE COLLODION AND
PAPER PRINTING PROCESSES,

AND FOR

STEREOSCOPIC PICTURES.

BY

E. STANLEY BENT.

JOHN MENZIES, EDINBURGH.

HOULSTON AND WRIGHT, LONDON.

1857.

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OR

WHAT TO DO AND HOW TO DO IT

THE SIMPLE

PLAIN METHOD OF THE LANCET AND

IN THE LANCET OF 1861

AND

STEREOSCOPIC PICTURES

BY

E. STANNARD BENT

JOHN WILEY & SONS

NEW YORK AND LONDON

1881

DEAR READER,

Many long years ago I began to dabble in Photography, and for weeks I broke my heart with all sorts of failures. The fact was, I wanted somebody to tell me "what to do, and how to do it," but it was a mystery then, and nobody would. Now, to prevent you having the failures and heart-breakings aforesaid, I have compiled these pages, and trust they may be useful to you. Yours, &c.

E. STANLEY BENT.

Edinburgh, Feb. 1857.

My dear friend,
I have just received your letter of the 14th inst. and
in reply to inform you that I have no objection
to your using the facts of my life in your book.
I would be glad to see it, and I am sure it will
be a valuable addition to the literature of the
country. I am, dear friend, very truly,
Your friend,
J. W. Alden

J. W. Alden

Massachusetts, 21st 1847

MY DEAR CHARLES,

You have often tried to inoculate me with your Photographic mania, and I have as often resisted your invitations to dirty fingers, spoiled carpets and linen, to say nothing of cut silk handkerchiefs, &c. &c., but now I begin to feel that I shall be behind the age if I do not know how to make a Photograph, and I entreat of you to write me plain and unmistakeable directions how to go about making pictures on glass, devoid of all technical terms, and the x y z 0000 of chemistry. Tell me plainly what I must do, and how I must do it, and above all things, do not bother my poor brains with too much information at once. Let me go on by degrees.

Yours, &c.

DEAR GEORGE,

Your letter gave me the greatest pleasure, for I delight to enlist another to the now large band of Photographers, and I trust that I may be able to express myself on paper with such an amount of clearness, that you will be able to understand "what to do, and how to do it."

In the first place, you will have to provide yourself with a lens, camera, camera stand, an upright bath for the silver solution, a few funnels of glass porcelain or gutta percha, and a flat dish or two. As I am at a distance, and cannot choose these for you, I must give you a few hints on the subject.

First, decide in your own mind the size you would like your pictures to be, then go to any respectable dealer in apparatus, and tell him what you want. I am aware that you know as much about a lens as a lens knows about you, therefore you must judge for yourself

when you are shown it. See the lens put on to a camera, the size you have decided upon, and place it opposite to some object, then observe well the reflection or picture it gives on the ground glass. See if it is clear, sharp, and distinct, up to the very edge; if it is, you may venture on it.

In or out of your house you must have a room in which you can work your deeds of darkness, or at least Photographic darkness, which means "yellow light." Place a blind at the window of three thicknesses of amber calico, and you will see to work, but the light will have no bad effect. This is better than gas or candle. Get a room that the housemaid has not occasion to visit.

Now I will suppose you have got your apparatus at home, and anxious to begin operations. Well, you must purchase some "nitrate of silver," and make a solution of 30 grains to every ounce of rain or distilled water, enough

to fill your silver bath. Previous to putting it into the bath, pour into the solution about a table spoonful of iodized collodion, and then filter it into the bath. It is now in working order, and you must be very careful never to allow any thing to drop into it, or dirt of any kind to get near it. Have a top made, so that you can cover it up when not working with it. Your bath being all right now, you must get some iodized collodion, this you will easily procure, whether good or not I cannot say, but there are a great many good collodions sold. Ramsden's & Thomas's I like best, so I will suppose you have a good collodion, and go on. Now get a glass plate the size of your camera frame, and first clean it well with a little tri-poli or rottenstone and water, then wash it freely under the tap, let it drain and dry on a linen cloth, (always kept for the purpose, and washed without soap,) give it a final polish with a silk handkerchief, and it is ready for

preparation. Hold the glass in the left hand by one corner, and pour on to the centre enough of the collodion to cover the plate; let it flow well up to the edges, then quickly drain into the bottle again. This is an operation which requires practice, but you will soon get into it and not spill a drop. You then place your plate on the dipper of your silver bath, and plunge it in, not pausing for an instant until you feel the dipper at the bottom, for if you do, there will be a line right across the picture, which does not improve it. Let it rest where it is for two minutes, then lift the dipper up, and look to see if there are any streaks or appearance of oiliness on the plate, which will by this time have an opal creamy appearance. When this disappears, you may let your plate rest on the dipper, out of the bath, for about half a minute, to get rid of the superfluous solution, and place it into the camera frame. This is now ready for taking the picture.

Keep the frame carefully from the light, until you are quite ready to use it, and always lay it face upwards, as by this means it keeps moist longer, for if it dries it loses its sensitiveness. Place your camera opposite the sitter or view you intend to copy and focus, (which you do by screwing the lens out or in,) until you get it quite sharp on the ground glass. Take the glass out of the groove, and put in it your plate holder, drawing up the slide before you uncover the lens. Let it remain uncovered, but I cannot tell you how long, not being at your elbow. Practice only can guide you. If out of doors, with sunshine, ten seconds should be the utmost, with a portrait lens; but I think you will find two or three quite sufficient. Your picture is now taken, but on looking at the plate in your dark room you will find it in the same state as when you put it into the frame. The picture is there, sure enough, but

requires coaxing to show itself. Now for it: we'll soon see what you've got.

Mix the following, which is called

Positive Developing Solution.

Sulphate of iron,	12 grains.
Acetic acid,	8 drops.
Nitric acid,	2 drops.
Nitrate of potash,	$\frac{1}{2}$ a drachm.
Spirits of wine,	$\frac{1}{2}$ a drachm.
Rain water,	1 ounce.

Pour on the plate enough of this to cover it, holding it quite flat, so as to keep it on evenly. See, it's coming! What is that? Oh! the shirt front,—now the face,—there he is,—quick as lightning pour water on, or you will have a negative; pour plenty on, right in the middle. Now to clear it, and get the blue appearance off. This is done by putting it into a dish full of a saturated solution of hyposulphite of soda, and letting it remain there until you see

it is all gone. I know you are fast again. "Saturated solution! what can that be?" Once I did not know myself, and did not like to ask. It is placing some hyposulphite in a bottle of water until no more will dissolve.

After the hypo, pour on another stream of water gently, and dry the picture by the fire. When dry, pour on, in the same manner as you did the collodion, a varnish, (made on purpose, and easily procurable,) letting it drain off into the bottle by one corner. Dry again, at the fire, and there you are, a picture the very first attempt. Bravo!!!

DEAR CHARLEY,

Many thanks for your kind instructions, which I studied well, and will give you a few of my results. I dare not tell you how many glasses I have broken—how many ounces of collodion I have spilled—how many shirt wrist-bands blackened—how many table napkins ditto,—nor how the carpet in the “boudoir” will have to be replaced—nor how cook says she cannot have master making nasty messes in her clean kitchen—nor how I burnt my fingers by the varnished plate catching fire—nor how, in consequence, I dropped the bottle, and the flames going up the chimney, cheated the sweep, &c. &c. &c; but I will tell you how my pictures came instantly, I poured on the developing solution, and when I cleared them the faces were gone, and the clothes were grey—how there were drab stains sometimes from one corner and sometimes spreading in streaks all over the plate, and

how latterly the pictures have seemed in a mist and not clear at all. Why are all these things? I am disappointed much, and begin to think you have omitted something, for I have done all you told me. But I do not despair, and cannot go back, as all my friends are asking me when they must come for their portraits. Do—there's a good fellow—set me right, and, at the same time, tell me how to make negatives. I have sent a hamper per rail.

Yours, &c.

DEAR GEORGE,

Yours to hand. I'm delighted, for you seem to be in the very thick of it. Why, man, you've been getting on too fast, and making negatives instead of positives. Your quick developing pictures were merely exposed too long, and if you had only known what I know, you would have kept them. Don't expose so long for positives, and never let your sitter sit in the sunshine, or let the sun shine into your lens.

The stains arise from your not wiping your plateholder from the silver left by the last plate. Try a piece of clean blotting paper at each corner.

The streaks are caused by light which comes in to the plateholder by your not being careful to keep it under cover. Always keep a black cloth over it whilst going from your dark room to the camera and back again.

Now as to negatives. Expose a little longer,

and operate the same as for positives, until you develope, when, instead of the positive, use the following

NEGATIVE DEVELOPING SOLUTION:

Pyrogallic acid,	2 grains.
Citric acid,	$1\frac{1}{2}$ grains.
Spirits wine,	$\frac{1}{2}$ drachm.
Water,	1 ounce.

Keep this on until you see the outline of the image come up, then pour it off into a measure or wine glass, and add a few drops of the silver bath to it. Pour this on and off, and you will find, on looking through your picture, that it is getting very intense. When you see every thing come plainly out, and the light parts black, wash off, hypo, and varnish as before. This is a negative, having the lights dark, and *vice versa*.

I suppose, having made a negative, you will want to make paper copies, but before bidding good bye to collodion, and whilst the paper is

being got ready, we will print a transparency on glass, and see what sort of a picture it will make. Coat a collodion plate, excite it in the silver bath, and let it drain about a minute. Place your negative face upwards in the plate-holder, and lay a strip of blotting paper down each side, to prevent actual contact—then place the collodion side of your plate on the negative, and expose to a weak light, such as a window with the blind drawn down for a second, or a gas jet for ten to fifteen seconds.

Develope, &c. as for a positive, and you will have what is called a *transparent positive*. You had better do this on fine ground glass.

Now for

PRINTING ON PAPER.

This is very simple, and there are many ways of doing it. The paper must be prepared with a salt, then excited with nitrate of silver, exposed to light, washed, hypo'd, and then washed again—and that is all. As I said

before, there are many ways of doing it, and all are good—some quick and some slow. If I were to give you every process used by me, this letter would be more like a brief—so I shall just give you two or three simple ones now, and at a future time, if you are a good boy, and get on well, I may give you some more.

Buy a printing frame, with a very thick piece of plate-glass in it, and remember always to take your negatives on patent plate-glass, or you will break them, and then, (don't mention it!) talk about losing a pet skye, it's nothing to a Photographer losing (of course) his best negative.

Get some of Canson's, Marion's, or Waterston's photographic paper, and a very very clean dish. Fill the dish with rain water, to which add table salt, say 10 grains to the ounce of water. Immerse the paper sheet by sheet in this for about five minutes, taking

care not to let any air bubbles form, and the best way to prevent this will be to float one sheet, and push the other's one by one under it. Hang them up to dry by one corner, singly. I use the American spring clothes pegs, which I find capital, as they do not tear the paper. When dry, iron with a box iron, and mark the smooth side of the paper, that side without wire marks.

TO EXCITE.

Float this on a solution of nitrate of silver, 40 to 60 grains to the ounce of rain water, for three minutes in the dark room. Hang up to dry. You cut this the size you require, and place the marked side to the face of the negative, and the back of the negative to the plate glass of the frame. Screw it very close, and expose it to the strongest light you can, until you see that the edges of the paper are blackened, then bring it into your dark room, and undo one lid of the frame, when you will

be able to judge whether it is done enough. It ought to be a little more done, or darker than you wish it to be when finished, as the after process reduces it. When satisfied, take it out, and let it remain ten minutes in a bowl of water. This dissolves the silver out, (and which silver, or three-fourths, you may save.) I heard the other day of a gentleman who had a silver tea service, made of silver so saved. Only think.

When washed, immerse it in the following solution, which should be mixed a few days before using, to give good tones:—

<i>Hyposulphite of soda,</i>	8 ounces.
<i>Chloride of gold</i>	3 grains.
<i>Water,</i>	8 ounces.

You must mix the gold in a little water, and add it to the soda, for if you put the soda to the gold it will precipitate, and be of no avail;—a very singular thing, but no less true.

Let your pictures remain in this bath till

they are the tone you desire. They first go red, then brown, then black, and then green or grey. So you can please yourself—"vich-ever you please," as the showman says.

This done, wash the print, but by washing I don't mean putting it into a little water and letting it soak. It must have a bona fide washing, to get all the hypo out. I wish the great chemists would find some substitute for hypo, for it is nasty stuff to work with, and spoils more pictures than any thing else; and although Prince Albert interested himself, and got a committee appointed to inquire into the matter of faded and fading pictures, and the causes of fading, and the means to be taken to prevent fading, they, (the committee appointed at the instigation of Prince Albert,) couldn't do it, so how can you expect me to do it, although I do print about a gross a day, and never have any complaint, still I could never have the impudence, or "cheek," as they say

in Lancashire, to tell the great chemists, &c. &c. that if they will only wash their prints well in running water for twenty-four hours, they will not fade. I could not think of it. However, you try that plan, and have faith, that's all I have to say on the subject, and an important one it is.

The hypo washing subject rather excites me, so I have kept you longer than I intended, but I must tell you how to make albumenized paper, and then I'll close. This paper has a glazed surface, like a nice currant bun, and gives rather a sharper picture than the other, not quite so "artistic," but some people like it, and it is good for stereoscopic pictures. You make it as follows :

Get 20 eggs. Break them, and drop the whites, free from germ, into a basin. Add 20 oz. of water, and 320 grains of chloride of barium or chloride of ammonium, or 160 grains of the one and 160 grains of the other,

beat up with a silver fork or bunch of quills, until you can froth it no longer. Let it settle for 24 hours,—pour into a clean flat dish,—float the paper on it for *one minute*,—hang up to dry,—excite as before, &c. Many thanks for the grouse. Let me see some specimens soon, and I'll push you on a little more.

Yours, &c.

DEAR CHARLES,

I have been very busy since your last letter, in following out your instructions for printing from my collodion negatives, of which I enclose copies, for I really have got some very good ones, much to my surprise, and I begin to think myself "some pumpkins," as the Yankees say, and to talk Photographic. Only think when, a fortnight ago, I had not the remotest idea on the subject.

But still I am not satisfied with my prints, as I cannot get two the same colour. Some will be red and some brown, whilst others go a dingy green. I'm afraid I have a great deal to learn, and that I am giving you a world of trouble, but you have involved me in the whirlpool of Photography, and I look to you to see me set right. What is this I hear about the keeping of collodion plates sensitive for a long time? Is it to be done? as if so I should

like to know it, there being, as you know, many charming spots a few miles off, which I should attempt, but see no fun in dragging my apparatus dishes, &c. all that distance. If there is any thing in it let me know. I should also like to be able to make a stereoscopic picture.

DEAR GEORGE,

Yours is received, with the prints, which are very tolerable for a beginner, in fact, they show you to have been careful and attentive to the directions I gave you. Still, as you go on you will do better, and learn to know the exact amount of printing each negative requires. The print which has gone green has been in the fixing bath too long, the red one has been too short a time, and the brown one is quite correct, and a very good print.

In the red print I notice that the sky is very dark, showing that in the negative you have not sufficient intensity to prevent the light printing through. When this is the case, but the negative otherwise good, you may carefully paint the sky black on the back of the negative, either with the common black varnish, or lamp black. You hardly develope

your negatives enough yet, but don't be afraid of doing so, as the strongest negative makes the best print.

In printing portraits, you may make your back grounds quite artistic, by shading the negative during the process of exposure to the light; say, for instance, you wish to throw a shade over one side of the picture, all you have to do is to place a card or book over the part you wish not to be affected, about a couple of inches from the frame, for a short time, perhaps a third of the time of exposure. By this means you may diversify the prints from the same negative, and make a pleasing variety. In the same way you may have your picture an oval nicely shaded from the edge. Try these plans, and I am sure you will like the results.

As you have got on so well, I will now give you a printing process or two, by which you

may obtain good prints in the dullest weather, but first you may try a paper salted with whey, which will give the finest tones of any paper I have yet tried. The whey solution you must make and salt as follows: Take a quart of skim milk, and put it on the fire in a pan lined with china, quite clean; when just at boiling point add a piece of rennet, or a table spoonful of acetic acid. This will cause it to curdle. Let it stand a few minutes. When you pour off the whey, add salt to it at the rate of 10 grains to the ounce, and filter through blotting paper. Excite with a 40 grain silver solution, and fix in the hypo and gold bath as in the former recipes. You will find this give splendid results.

Now for another kind of printing, which you will find convenient, if you wish to print many copies in a short time. I call it the " Magic printing process." It is as follows:

Whey, 8 oz.

Albumen, 10 oz.

Bromide of potassium, 54 grains.

Dissolve the bromide in the whey, and add it to the albumen. Beat all up with a bunch of quills, and let it settle some hours, then filter through paper. Float your paper for about a minute.

Excite this on a solution as follows, for about three minutes:

Nitrate of silver, 30 grains.

Citric acid, 1 grain.

Water, 1 oz.

Expose in the printing frame until you see the image, which will be in sunshine about 20 seconds. Take it out in your dark room, and immerse it in a saturated solution of gallic acid. Gradually you will see the picture become stronger, until it is quite developed, then take it out, and wash it in water for ten mi-

minutes at least, to get the free nitrate of silver out, and fix in a weak solution of hyposulphite of soda. Half an hour will suffice, when you may wash as before for some hours in running water. Dry between blotting paper, and iron whilst the print is damp. You will be surprised at the change which comes over your print in the ironing process. What appeared foxy red now appears a rich brown or purple. The great Hardwicke recommends iron for toning, so do I, but my iron is a box iron.

This process will give you a developed print on albumenized paper, and one which, according to all the laws of chemistry, (I am informed,) cannot fade if the operations and washings be properly done. The whites will be perfect, and in fact every thing in the negative will be printed on the paper, and not be lost in the toning bath, as is too often the case in sun printing. Another thing, you will have to use no gold. Think of that.

I could give you a dozen other modes of preparing your salted paper, but if I did you would say I might as well have referred you to the Photographic Journal, page so and so, or to Mr ——'s infallible, &c. &c. As I know you would say so, I tell you plainly, you may take any salted paper, and exciting and developing as above, you will obtain good results. Every picture I print is done by this process. In my next I intend to give you the albumen and collodio-albumen processes.

With regard to keeping your plates sensitive for a length of time, the most simple and effectual plan is to procure some honey, pure from the comb. Mix equal parts of this and rain water. Collodionize and excite your plate in the silver bath as usual, and pour some of the honey and water on the plate, letting it flow well over for a couple of minutes. Pour back into the bottle as much as will drain off, and set your plate, leaning against the wall, or

a box, on a piece of blotting paper. In a few minutes, all that will drain off will be absorbed in the blotting paper, and your plate is ready for use in the camera, and will keep in that state for a month at least. In the exposure you will find a great difference. I should say, on the average, that a honeyed plate takes six times the exposure of an ordinary collodion plate. Before developing, you had better moisten the surface of your plate with water, so that the solution may flow evenly.

Now as to

STEREOSCOPIC PICTURES.

These are, of course, as you are aware, simple pictures after all, but two instead of one, and, in my opinion, there has been a great deal of humbug in the directions given, as to taking them correctly. I will endeavour to show you simply "what to do and how to do it."

Fancy your sister, who, I know, is sitting

opposite you, the sitter whose stereoscopic portrait you wish to take. Now look at her with both eyes. You see how she stands out from the wall behind her. Now shut one eye and mark carefully the difference. You cannot see so much of the side opposite your shut eye. Now open the one eye and shut the other and you will see the effect.

Well, your eyes are two lenses, and saw two sisters as it were, but at one and the same moment. Now put portrait lenses in place of your eyes, and does it not stand to reason that you get the same effect, for each eye made its own picture, and so do the lenses.

So all you have got to do is to make two pictures of the one object from different positions. As you have not a proper stereoscopic camera, you should prepare two plates, and place them in your two camera slides, taking them out together. Focus your picture and take one, then move your camera about three

inches to the left—focus again, getting the picture in the same position on your ground glass, and take the other. This picture will be perfectly and truly stereoscopic.

In taking a landscape, I recommend you to make the difference of six inches between the two positions of the camera, but always mind to get the same central object.

If you are fond of stereoscopic work, you should purchase a very nice little camera, made on purpose, which takes the two pictures on one glass. Now, good-bye, and I trust you will go on and prosper.

Yours, &c.

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